

# ***SOUTHEAST ENERGY INFRASTRUCTURE CONFERENCE***



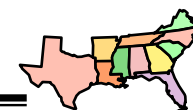
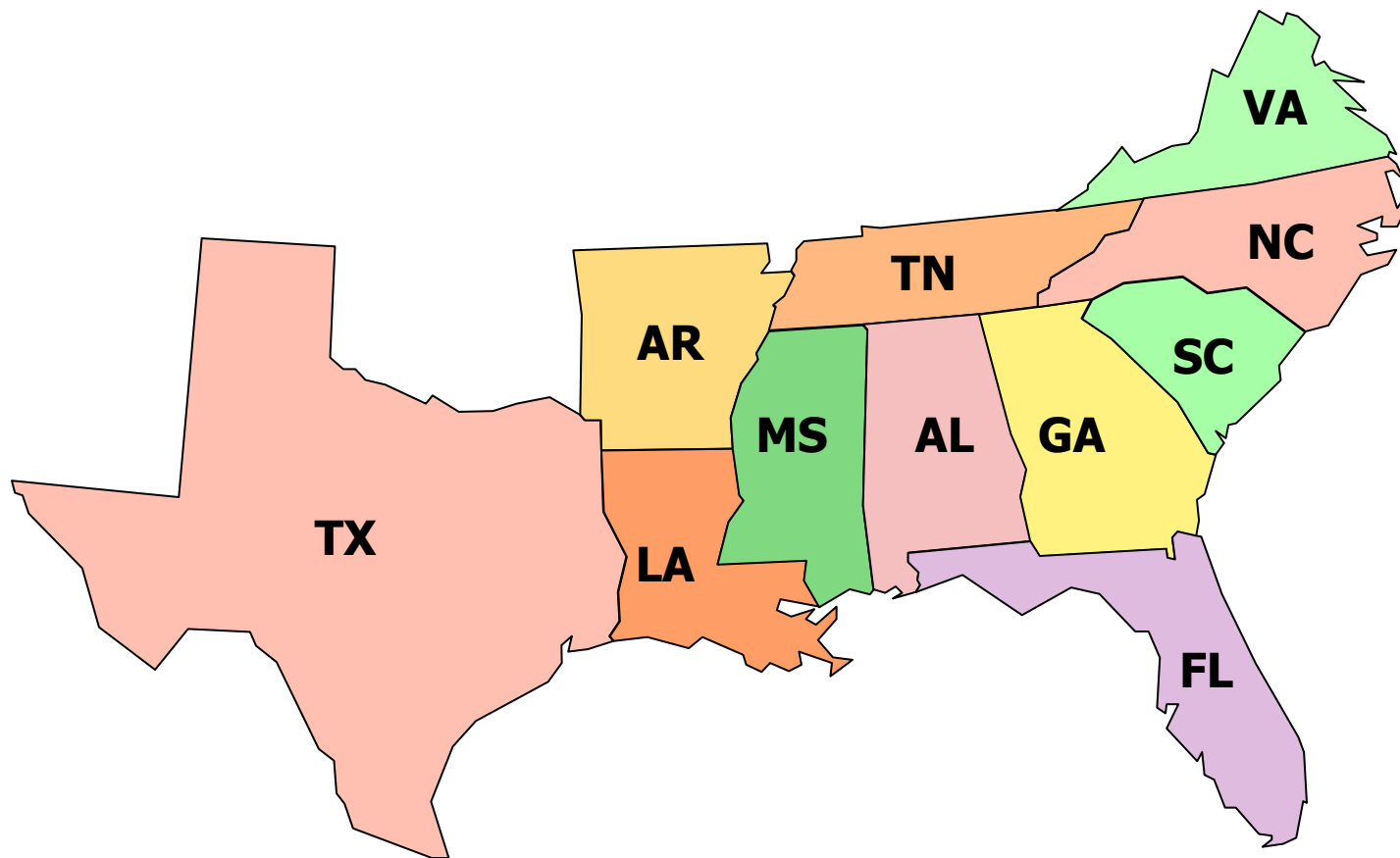
***Scott Miller***

***Jeff Wright***

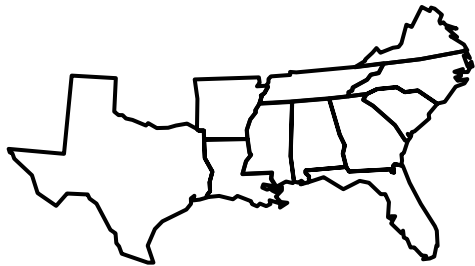
***MAY 9, 2002***

***ORLANDO, FLORIDA***

# SOUTHEAST US



# US/SOUTHEAST COMPARISON 1990 and 1999



**Population**

**GDP**

**Energy  
Use**

6%

63.1%

13.9%

14.3%

78.5%

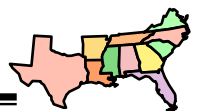
16.9%

81 million  
people

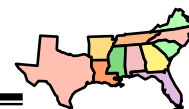
2.6 trillion  
dollars

34.4 quads

Source: US Census Bureau, Bureau of Economic Analysis, EIA

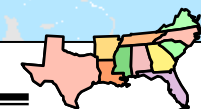
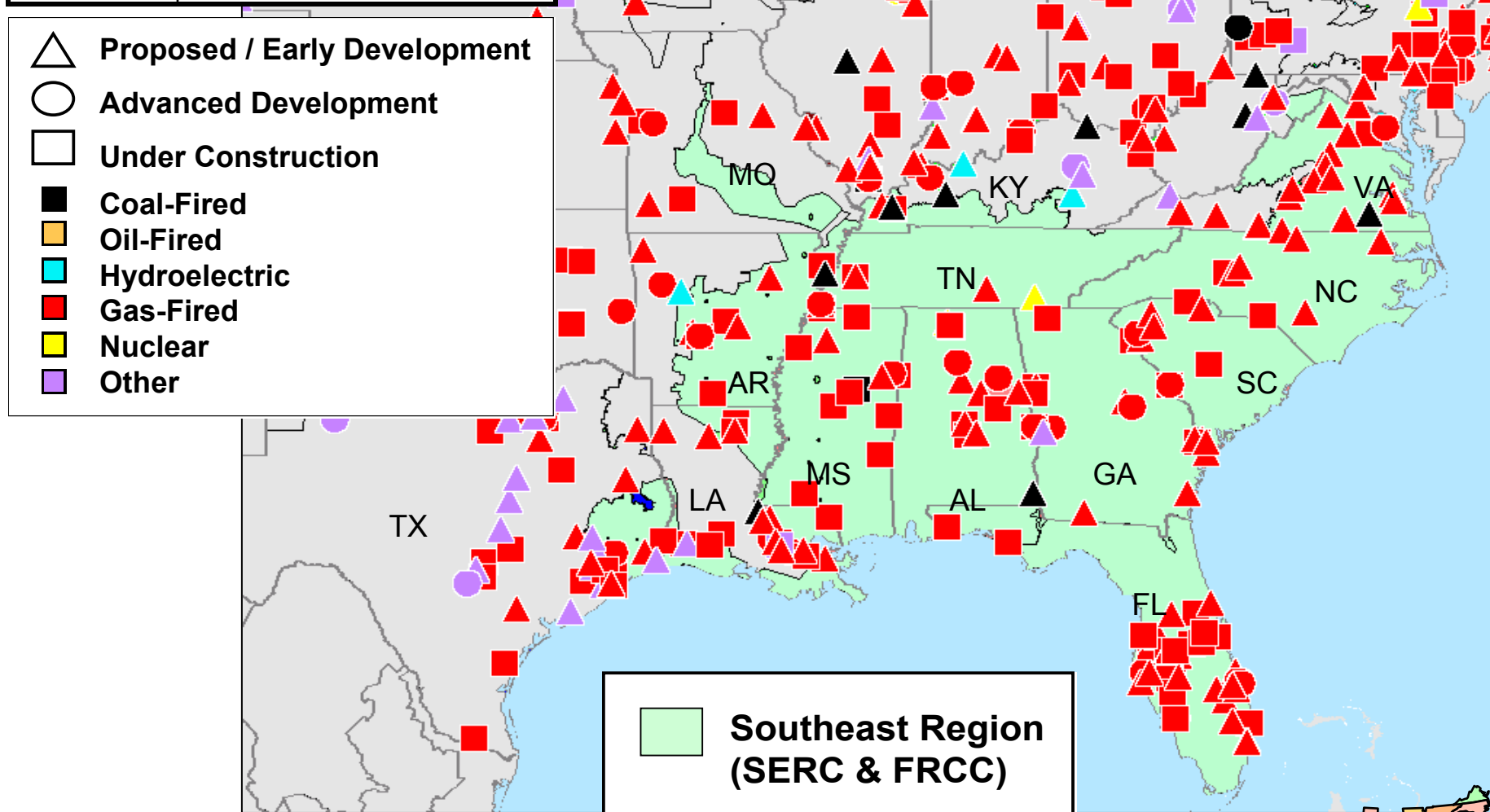


# ***ELECTRIC INFRASTRUCTURE***

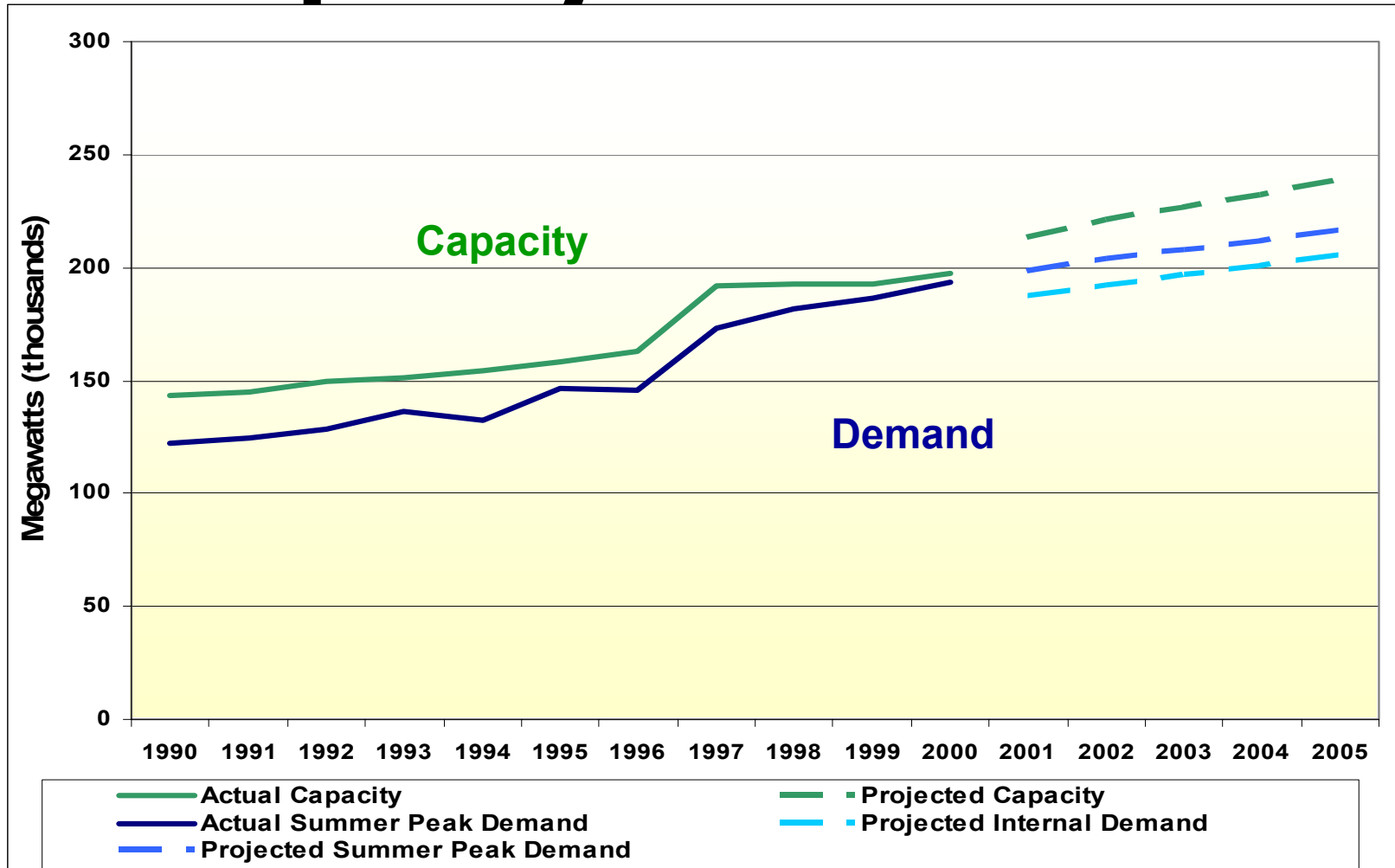


Megawatts	Status
40,740	Under Construction
11,216	Advanced Development
57,196	Proposed / Early Develop
109,152	Total Planned & Proposed

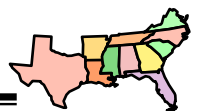
# Planned Southeast Electric Capacity January 2002 through December 2005



# Southeast Electric Capacity vs. Demand

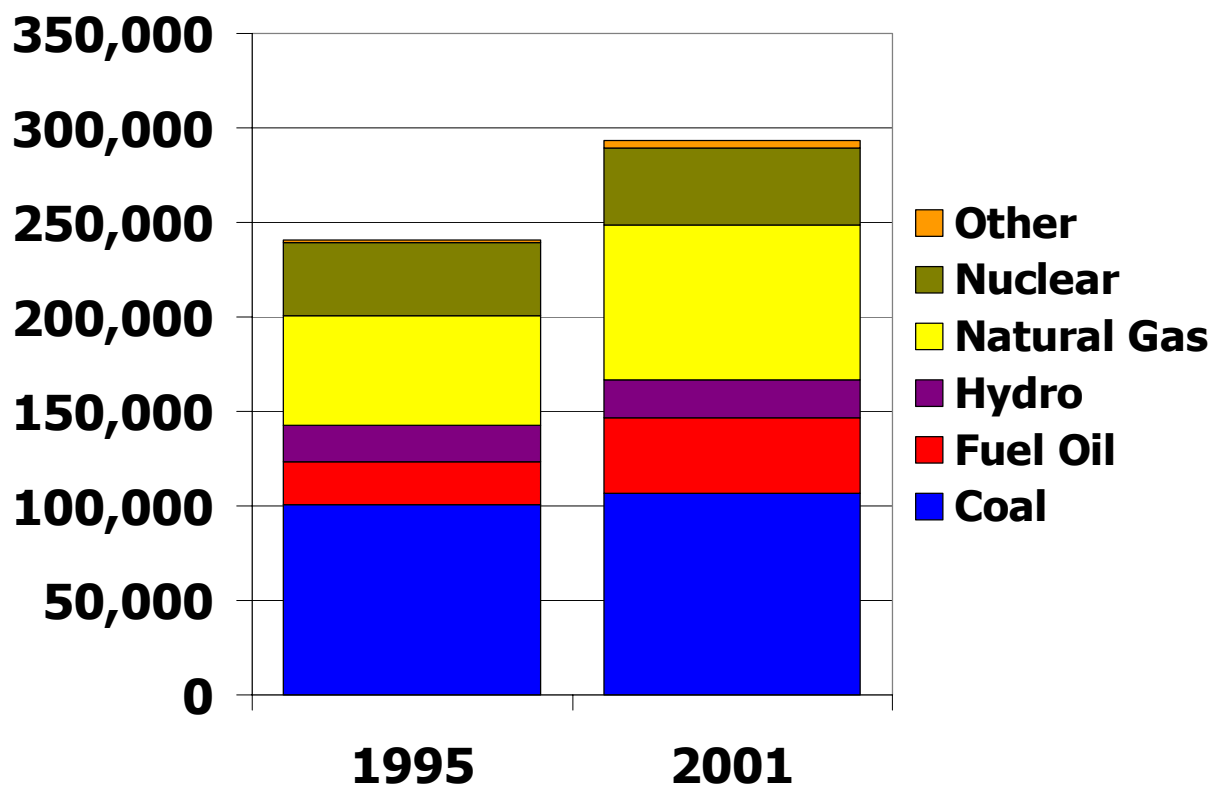


Sources: NERC, SERC, FRCC Regional Data.

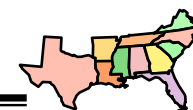


# Southeast Generation Capacity (in MW)

- Southeast generation capacity increased by 20.4% between 1995 and 2001.

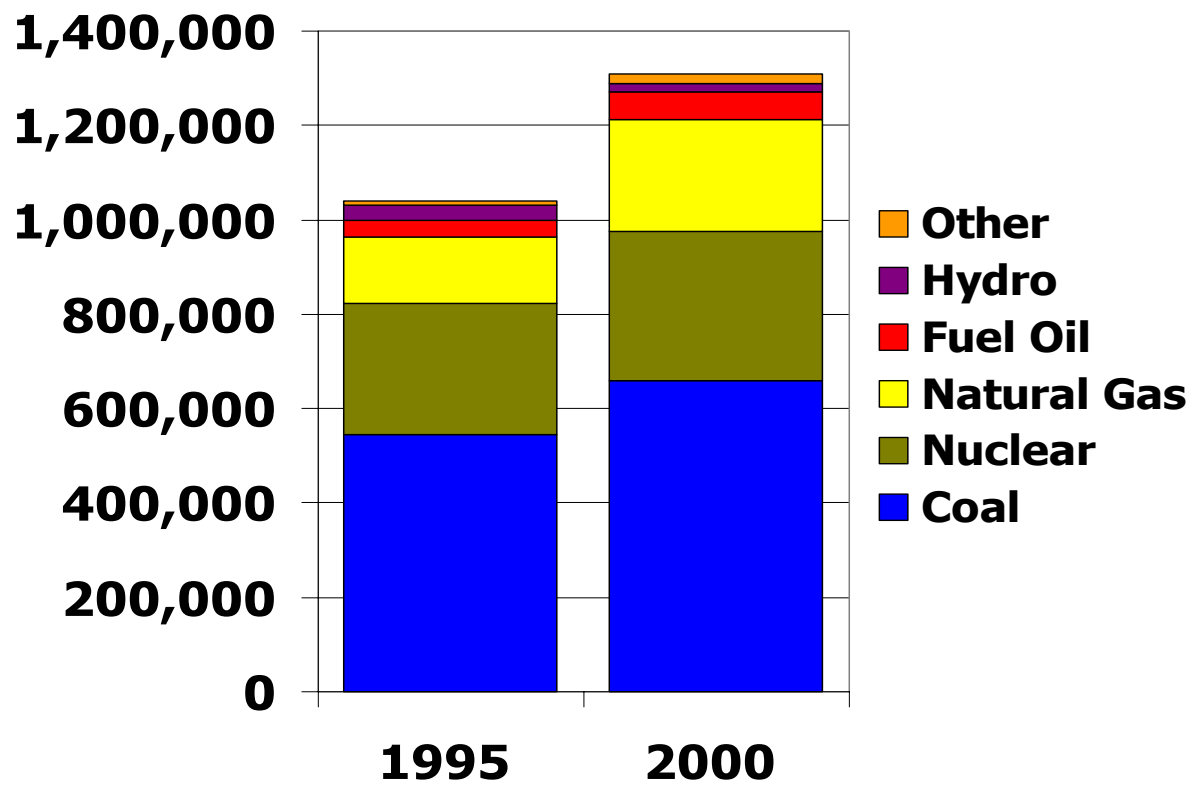


Source: RDI POWERdat

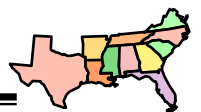


# Southeast Generation Output (in GWh)

- Southeast generation output increased by 26% between 1995 and 2000, to over 1.3 million GWh.



Source: RDI POWERdat





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Public Reference Room

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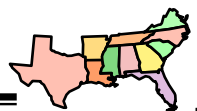
Toll-free 1-866-208-3676

Email: [public.referenceroom@ferc.gov](mailto:public.referenceroom@ferc.gov)

# Proposed Transmission Projects

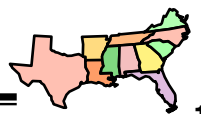
- There are 30 projects proposed to upgrade and expand transmission systems in the Southeast through 2008.
- There are currently 8 projects in progress in Texas to relieve transmission congestion.

**Source:** 2001 Report On Existing and Potential Electric System Constraints And Needs Within ERCOT Region  
<http://www.ercot.com/Participants/SystemPlanning/Transcons/Index.htm>; SERC Reliability Review Subcommittee;  
CP&L and Georgia Transmission websites

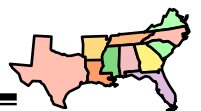


# Characteristics of Electric Infrastructure

- Growth in Generation almost entirely natural gas.
- However, growth to date has not kept pace with demand.
- New generation concentrated near gas pipelines.
- New generation not optimally located near load in the Southeast.
- Significant investment in transmission may be needed to move power to load.

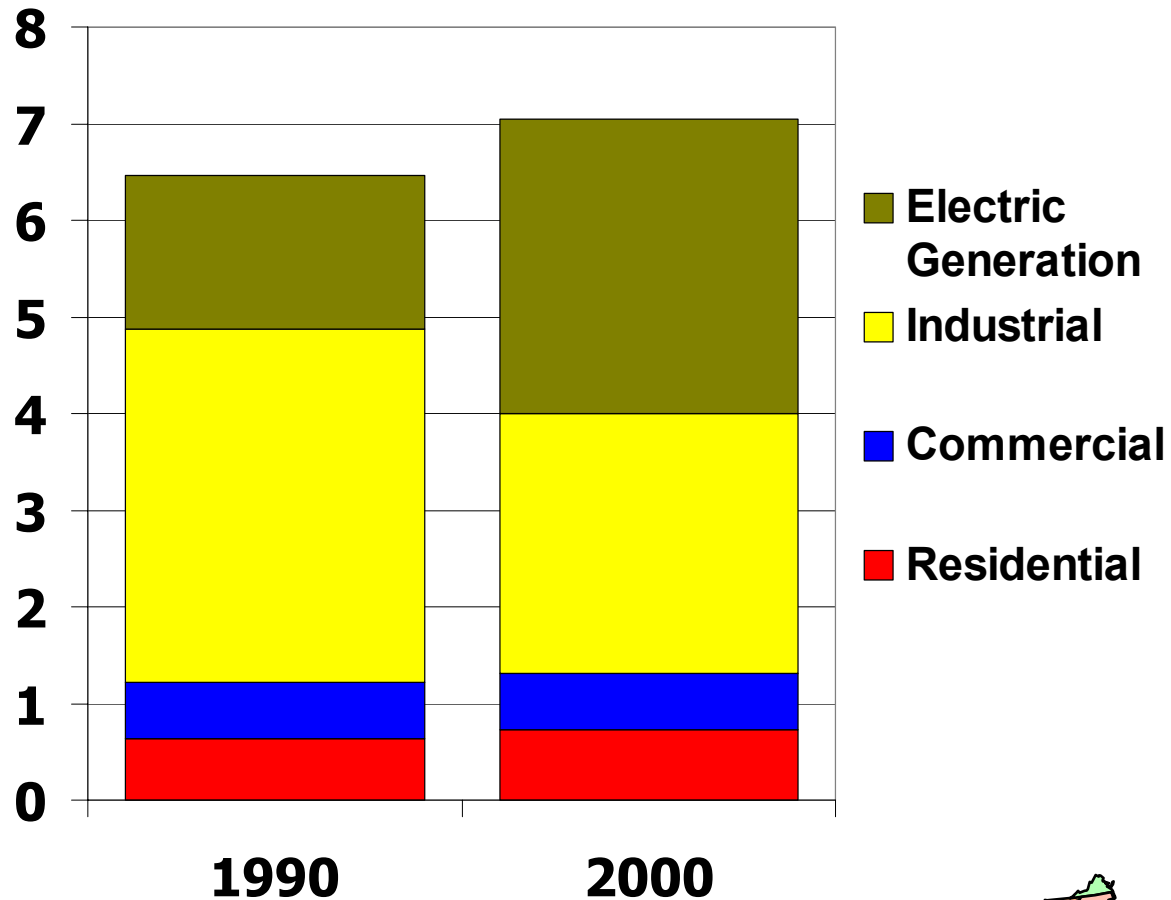


# ***GAS INFRASTRUCTURE***

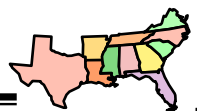


# Gas Consumption in the Southeast (in Tcf)

- Gas consumption increased by over 9.1% between 1990 to 2000, to about 7.05 Tcf.
- Gas consumption in 2000 was 31% of total US consumption.



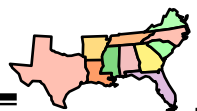
Source: EIA



# Southeast and Texas Gas Facts - 2000

	United States	Southeast	% of United States
<b>Total Gas Production</b>	<b>18.99 Tcf (Dry Production)</b>	<b>11.55 Tcf (Dry Production)</b>	<b>61%</b>
<b>Total Gas Reserves</b>	<b>177.4 Tcf</b>	<b>85.6 Tcf</b>	<b>48%</b>
<b>LNG</b>	<b>0.23 Tcf (Imports)</b>	<b>0.13 Tcf (Imports)</b>	<b>57%</b>
<b>Total Gas Consumption</b>	<b>22.83 Tcf</b>	<b>7.05 Tcf</b>	<b>31%</b>

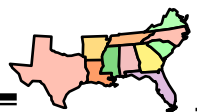
Source: EIA



# Gas Balance in Southeast and Texas

Gas Sources		Gas Uses	
Production	11.55 Tcf	Consumption	7.05 Tcf
LNG Imports	0.13	Exports (Mexico)	0.07
Total Sources	11.68 Tcf	Flow to MW	2.16
		Flow to NE	1.20
		Flow to SW	1.20
		Total Uses	11.68 Tcf

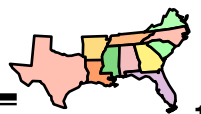
Source: EIA, FERC



# Existing Capacity

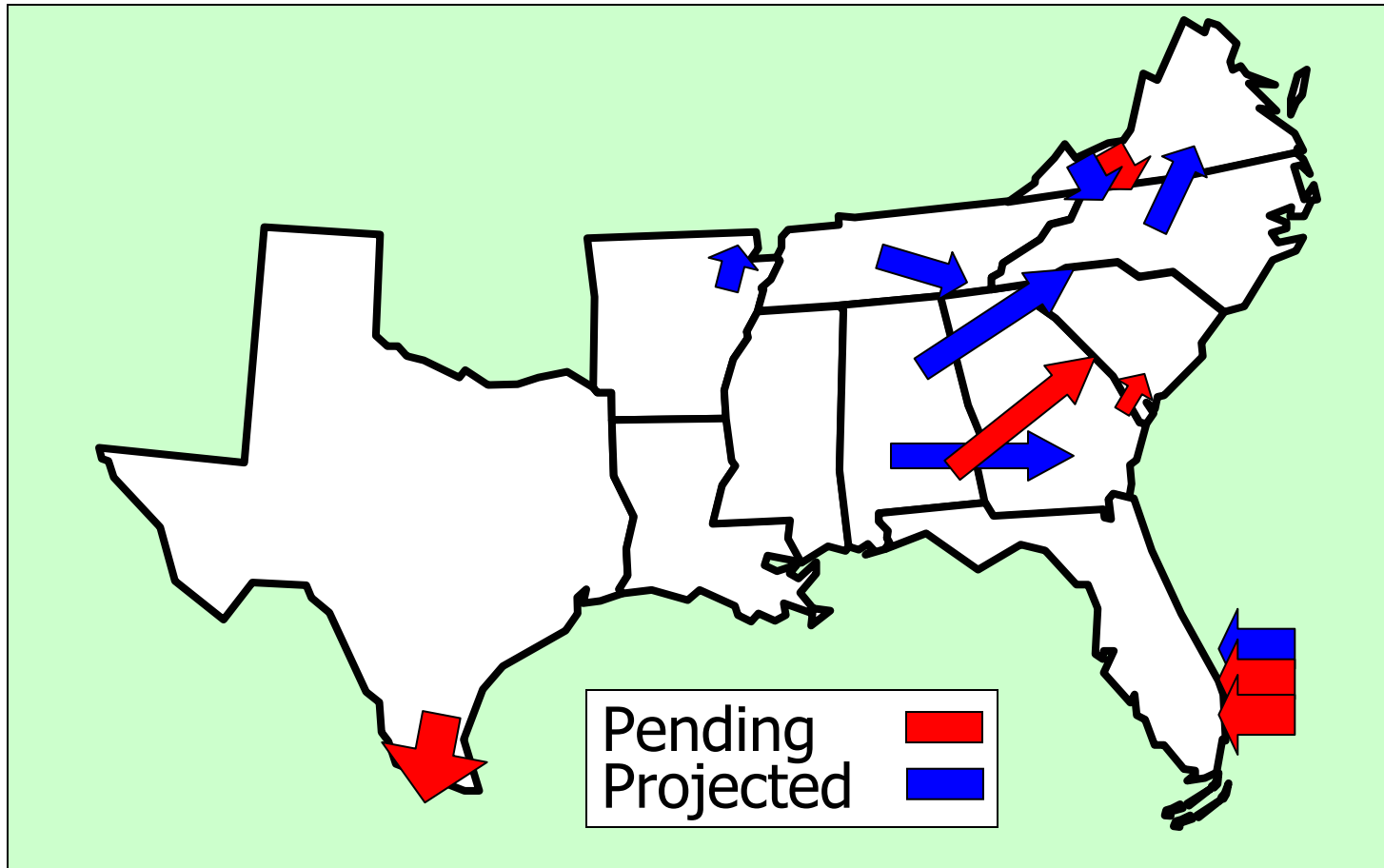
- There are 25 major US pipelines that originate in the Southeast gas market and serve both the Southeast and other markets.
- From 1990 to 2000, pipeline capacity grew from 20 Bcf per day to 22 Bcf per day - a 10% increase.
- Most of the pipeline expansions were to serve new gas-fired power plants.

Source: EIA, FERC

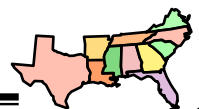




# Major Pipeline Projects May 2002

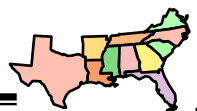


Source: FERC

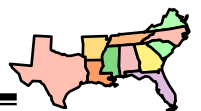


# Characteristics of Gas Infrastructure

- Electric generation is the driving force between recent infrastructure additions as well as future additions.
- Current and future gas production in the region will require significant investment in infrastructure, especially offshore.



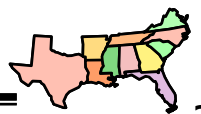
# ***HYDROELECTRIC INFRASTRUCTURE***



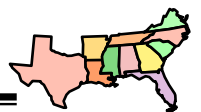
# Southeast Hydroelectric

- 1.5% of the Southeast's generation output was fueled by hydro in 2000, or about 20 million MWh.
- In 2001, total Southeast hydroelectric generating capacity was 20,526 MW.
  - FERC-regulated generation capacity in the region was 14,343 MW.
  - TVA generation capacity was 4970 MW.
  - Other municipal generation capacity was 1,213 MW.
- Drought has reduced generation output by over 40% from 1998 levels.

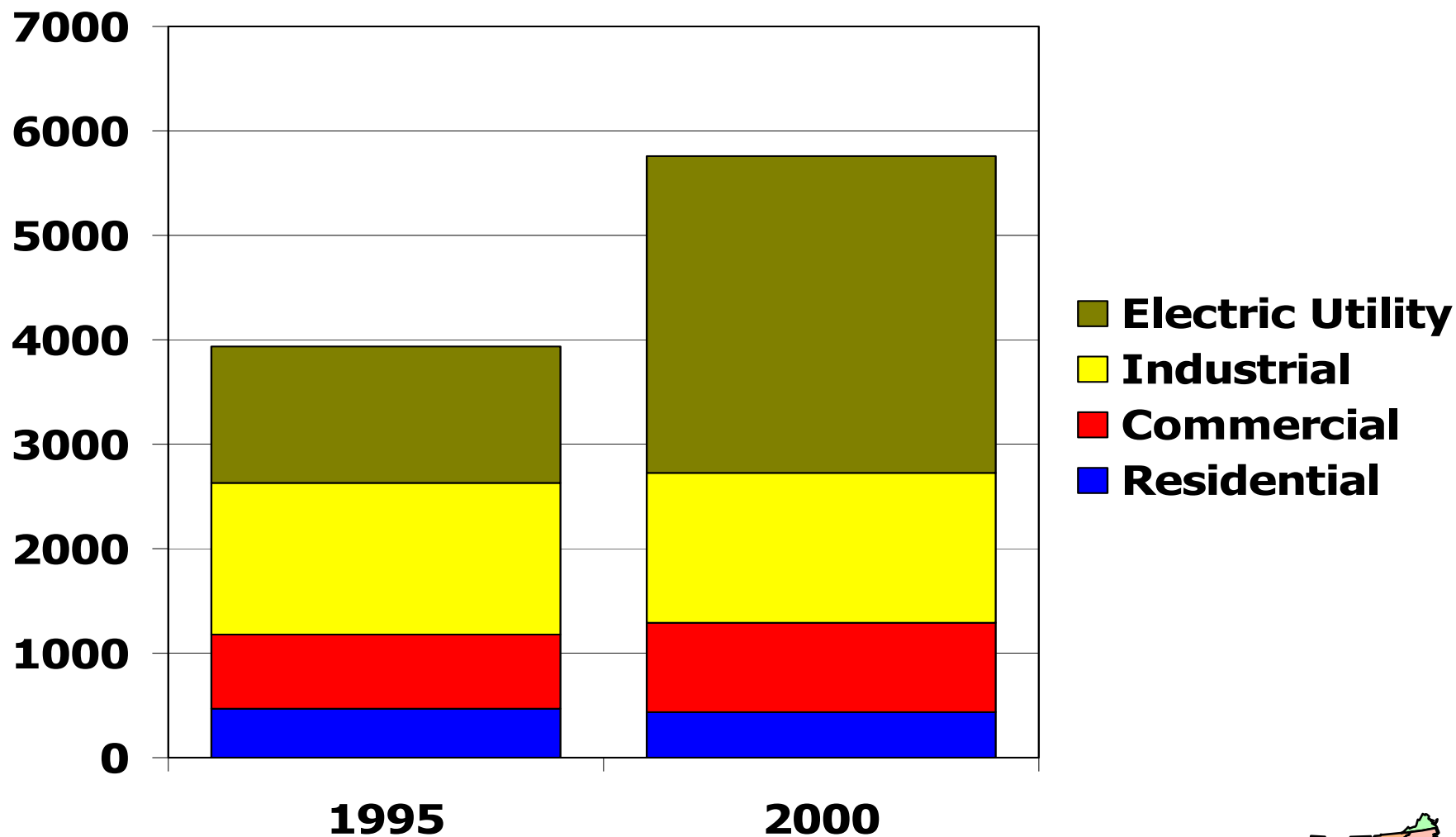
Source: FERC, EIA



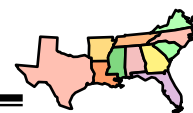
# ***OIL***



# Fuel Oil Consumption by Sector (in million gallons)



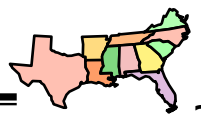
Source: EIA



# Fuel Oil in the Southeast

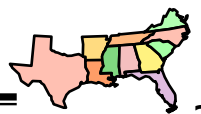
- 4.5% of the Southeast's generation output was fueled by fuel oil in 2000, or about 59 million MWh.
- Electric utilities are the largest users of residual fuel oil (No. 5 and 6) in the Southeast and Texas.
  - Florida utilities are the largest fuel oil consumers in the region.
- Over the past six years, fuel oil consumption by electric utilities increased 130.9%.

Source: EIA



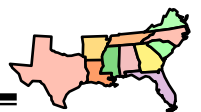
# Fuel Oil in the Southeast

- 47% of total U.S. refinery capacity is in the Southeast and Texas.
- Majority of the nation's oil and product pipelines originate in the Southeast and Texas.





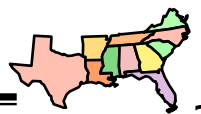
# ***COAL***



# Coal Production and Consumption

- Texas and Virginia, to a lesser extent, Alabama are the primary coal and lignite-producing states in the Southeast.
- Coal and lignite production in the Southeast totaled almost 109 million short tons, or about 10.1% of total US production.
- Southeast coal and lignite consumption has increased slightly in the last five years – from 323.1 million short tons in 1996 to 338.2 million short tons in 2000.

Source: EIA



# Coal for Electricity

- In 2000, 54% of all Southeast electric generation was coal-fired.
- 91% of all coal consumption in the Southeast between 1995-2000 was by electric utilities.
- In 2000, 37% of all Texas electric generation was coal and lignite-fired.
- 95% of all coal and lignite consumed in Texas between 1995-2000 was by electric utilities.

Source: EIA

